

modifications as are suited to the particular use contemplated.

CM

What is claimed is:

Draft B1

1. A device for [reading an image] sensing a light comprising:
a semiconductor layer formed on a substrate, said semiconductor layer comprising [an image] a light sensor region and a semiconductor switch region adjacent to and operatively connected with said [image] light sensor region,
wherein said semiconductor layer has a [semi-amorphous] structure comprising a mixture of amorphous and crystalline structures, in which a Raman spectrum of the semiconductor film exhibits a peak deviated from that which stands for a single crystal of the semiconductor.

SUB I2 2. The device of claim 1 wherein said semiconductor layer comprises hydrogen doped silicon.

I 171173 SUB I3 3. The device of claim 1 wherein said semiconductor switch region comprises a thin film transistor of which active region is formed of said semiconductor layer.

I 171173 SUB I3 4. The device of claim 1 wherein said [image] light sensor region comprises at least two semiconductor regions having different electrical properties and forming a junction.

Draft B2
5. A device for [reading an image] sensing a light produced by a process comprising the steps of:

depositing a semiconductor material on a substrate;
forming a photoelectric conversion semiconductor device on said substrate comprising a p-type impurity semiconductor region, an intrinsic semiconductor region, and an n-type impurity semiconductor region, a semiconductor region of said photoelectric conversion semiconductor device being made of said semiconductor material; and

forming a thin film transistor on said substrate which constitutes an electric circuit required to [read an image] sense a light, a semiconductor region of said thin film transistor being made of said semiconductor material;

wherein said semiconductor regions are arranged in order with said p-type impurity semiconductor region adjacent said intrinsic semiconductor region and said intrinsic semiconductor region adjacent said n-type impurity semiconductor region in said photoelectric conversion semiconductor device, said order being in a direction perpendicular to that in which [an image] a light to be [read] sensed is incident thereon.

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I 171173 6. The device of claim 4 wherein said two semiconductor regions of the

[image] light sensor region are laterally arranged on said substrate.

I 171173 7. The device of claim 5 wherein said photoelectric conversion semiconductor

device further comprises an amorphous semiconductor film provided on a side of said
intrinsic semiconductor region on which said [image] light is incident through said
amorphous semiconductor film.

I 171173 8. A device for [reading an image] sensing a light comprising:

a semiconductor layer formed on a substrate, said semiconductor layer

I 171173 L L [comprising [an image] a light sensor region and a semiconductor switch region adjacent
to and operatively connected with said [image] light sensor region, [.]]

wherein said semiconductor layer has at least one of an electron mobility
15-100 cm²/V sec and a hole mobility 10-100 cm²/V sec.

I 171173 9. A device for [reading an image] sensing a light comprising:

a semiconductor layer formed on a substrate, said semiconductor layer

I 171173 L L [comprising [an image] a light sensor region and a semiconductor switch region adjacent
to and operatively connected with said [image] light sensor region, [.]]

wherein said semiconductor layer has a [semi-amorphous] structure in which
a Raman spectrum of the semiconductor film exhibits a peak deviated from that which
stands for a single crystal of the semiconductor, and said semiconductor switch region
comprises complementary p-channel and n-channel thin film transistors.

10. The device of claim 9 wherein said semiconductor film comprises hydrogen
doped silicon.

I 171173 Sub I 9 11. The device of claim 9 wherein said [image] light sensor region comprises

at least two semiconductor regions having different electrical properties and forming a
junction.

12. The device of claim 11 wherein said two semiconductor regions in said

I 171173 [image] light sensor region are arranged in a lateral direction on said substrate.

13. The device of claim 9 wherein said semiconductor layer has at least one of
an electron mobility in a range from 15 to 100 cm²/V sec and a hole mobility in a range
from 10 to 100 cm²/V sec.

14. The device of claim 1 wherein said semiconductor layer has at least one of
an electron mobility in a range from 15 to 100cm²/V sec and a hole mobility in a range
from 10 to 100 cm²/V sec.

Add 17

Add 19

Add 20

Add 5

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